



GAUHATI UNIVERSITY
CENTRE FOR DISTANCE AND ONLINE EDUCATION

HOME ASSIGNMENT

Master of Science in Information Technology (M.Sc.-IT)

Semester - III (Session: 2023-2024, July-August)

Guidelines for Submission:

1. Learners who have been admitted in the Academic Session (2023-24, July-August) will write the Home Assignment.
2. Learners should write their **Roll Number, GU Registration Number, Subject, Semester, Paper Title, Paper Code** and **Name of the Study Center** clearly on the first page of the answer script in the space provided.
3. The formats of the answer scripts are available at and can be downloaded from, the GUCDOE website (www.gucdoe.in).
4. There will be 2 (two) compulsory questions in each paper, and each question will have options (Total Marks: 2 questions × 10 marks= 20 marks).
5. **Typed/Computerized answers will not be accepted.** Learners will write the answers neatly in their own handwriting.
6. Learners should not submit any plagiarized answers as such a practice is deemed to be unfair.
7. Learners of different Study Centers under GUCDOE will mandatorily submit the answer scripts at their respective Study Centers.
8. Learners of GUCDOE center will submit their answer scripts at GUCDOE Office.
9. **Last Date of Submission : 28th February, 2025.**

PAPER: INF 3016 (Web Programming Technologies)

Answer the following questions

2 x 10 = 20

Q. No. 1. a) What are the selectors in CSS (Cascading Style Sheet)? Explain the different ways to apply CSS styles to an HTML document

3 + 7 = 10

OR

b) What is global function in JavaScript? Give example of any three global JavaScript functions.

Q. No. 2. a) What is Open Database Connectivity? Explain different major components of Open Database Connectivity.

3 + 7 = 10

b) What is PHP and what are its main uses? Explain PHP control structures with suitable examples.

3 + 7 = 10

PAPER: INF 3026 (Distributed System)

Answer any two from the following questions

2 x 10 = 20

1. Explain the complexity challenges in distributed systems and suggest design principles to manage this complexity. **10**

2. Describe the Berkeley Algorithm for clock synchronization in distributed systems. Include its steps, advantages, and limitations. **10**

3. Explain Banker's algorithm for multiple resources to implement Deadlock avoidance. Write down the issues associated with Deadlock avoidance approach. **10**

4. What is Chandy-Lamport Snapshot Algorithm? Discuss the assumptions and prerequisites for Chandy-Lamport Algorithm and the steps involved in it. **10**

PAPER: INF 3036 (Compiler Design)

Answer the following questions

2 x 10 = 20

Q. No. 1. Explain elaborately the different techniques of eliminating ambiguities from a grammar. **10**

OR

Why is it required to derive the FIRST and FOLLOW sets from a grammar? Compare LL and LR parsers. **5 + 5 = 10**

Q. No. 2. Explain the various issues that arise during the generation of target codes with the help of suitable examples. **10**

OR

Explain the significance of using dependency graph in an annotated parse tree. Also explain the S-attributed and L-attributed definitions with some suitable examples. **5 + 5 = 10**

PAPER: INF 3066 (Data Mining and Warehousing)

Q. No. 1. Define Association rule.

3 + 7 = 10

Consider the database

<u>TID</u>	<u>List of Items</u>
T101	Pizza, Buns, Ketchup
T102	Buns, Chips
T103	Buns, Coke
T104	Pizza, Buns, Chips
T105	Pizza, Coke
T106	Buns, Coke,
T107	Pizza, Coke
T108	Pizza, Buns, Coke, Ketchup
T109	Pizza, Buns, Coke

Find all the frequent itemsets using Apriori algorithm with explanation at each step. Assume minimum support threshold to be 2 and minimum confidence threshold be 60%.

OR

How is Pincer Search Algorithm different from Apriori algorithm?

3 + 7 = 10

Consider the database

<u>Transaction</u>	<u>Itemset</u>
T101	{1,2,3,4,5}
T102	{1,3}
T103	{1,2}
T104	{1,2,3,4}

Find all the maximal frequent sets using the Pincer Search algorithm with explanation at each step.

Q. No. 2. What is a FP-tree? Consider the transaction dataset

2 + 8 = 10

<u>TID</u>	<u>Items</u>
T101	{f,a,c,d,g,i,m,p}
T102	{a,b,c,f,l,m,o}
T103	{b,f,h,j,o}
T104	{b,c,k,s,p}
T105	{a,f,c,e,l,p,m,n}

Construct the FP tree for the given database step by step showing the counts of each item.

OR

With the help of an example explain the construction of the CF tree.

---x---



গুৱাহাটী বিশ্ববিদ্যালয়
Gauhati University
দূৰ আৰু অনলাইন শিক্ষা কেন্দ্ৰ
Centre for Distance and Online Education

ASNWERSCRIPT FOR HOME ASSIGNMENT

Roll Number (8 digit):

(GUCDOE Enrollment No)

G.U. Registration No.:

Programme Name:

Semester:

Paper Title:

Paper Code:

Name of the Study Centre:.....

N.B.: Please note that the Name of the Candidate should not be mentioned anywhere. If found, the answer script will not be evaluated.)



A large, empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large, empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large, empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large, empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large, empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large, empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large, empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large, empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large, empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large, empty rectangular box with a black border, intended for the student to write their answers to the home assignment.



A large, empty rectangular box with a black border, intended for the student to write their answers to the home assignment.